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OMSAPC Advisory Circular

Subject: General Protocol for Determining Adequate Inaccessibility of
Parameter Adjustments for 1981 Model Year Light-Duty Vehicles and
Trucks

I. Purpose

A. The purpose of this Advisory Circular (A/C) is to describe the policy EPA will use to determine whether idle mixture and choke valve action adjustments are adequately inaccessible so as to treat these parameters as nonadjustable during emission certification and Selective Enforcement Audit (SEA) testing. These guidelines do not address the range of adjustment nor the adequacy of adjustment stops for those designs determined to be adjustable.

B. This A/C does not address the manufacturers' potential liability with respect to the recall, warranty, and tampering provisions of the Clean Air Act.

II. Background

A. For the 1981 and later model years, EPA must, under 40 CFR 86.081-22 (e)(2)(i), determine whether the idle mixture screw and choke adjustment parameters are adequately inaccessible. EPA will simply make a determination of whether or not a given parameter is adequately inaccessible or sealed for certification and SEA testing. If a parameter is determined to be accessible, EPA may specify any setting over the adjustable range to be used for emission testing.

B. EPA has been reluctant to publish specific guidelines or A/C's because of the concern that such documents would in effect become minimum design standards. These in turn might encourage the vehicle manufacturers to ignore the basic intent of the parameter adjustment regulations and design exactly to the minimum standards. Instead of publishing guidelines, EPA established an assessment group that examined the various design submittals for 1981 to determine if access to the respective adjustment parameters could be attained within 30 minutes. This assessment group has used any methods possible to attain access to the subject parameters using simple tools (defined as those commonly found in an individual's home toolbox, including an electric drill).



C. After reviewing many design submittals, EPA has found it could not judge most of the designs as being adequately inaccessible. The initial designs submitted to EPA did not effectively seal or render adequately inaccessible the idle mixture and choke adjustment parameters. However, EPA has observed substantial improvement in the revised designs being submitted to the point that several designs can be determined to be adequately inaccessible. EPA has observed a number of sealed parameter concepts which, with only minor upgrading, could be considered adequately inaccessible. A few designs have already been determined to be adequately inaccessible or sealed.

D. EPA has decided to hold a workshop to attempt to communicate, by example, what EPA considers to be adequately inaccessible. However, there is not enough leadtime to gain the necessary permission to show various manufacturers' designs to the public, to schedule a workshop, and to allow manufacturers to make the necessary redesigns in time for 1981 model year production. Hence, for the purposes of 1981 certification, EPA has decided to consider a number of designs as adequately inaccessible except where there remains some question as to whether the designs are fully adequate. Manufacturers with such designs are expected to continue to explore means to upgrade their designs for the 1982 and subsequent model years.

E. Once all designs become public, or after EPA can gain permission from individual manufacturers to display a specific design, a workshop will be held in order to more clearly communicate what EPA considers to be adequately inaccessible designs. After giving this feedback to the industry, and receiving comments on how this A/C might be improved, EPA will reevaluate this A/C and consider the need for and appropriateness of publishing another A/C for the parameters designated for the 1982 model year.

F. EPA is reluctant to permit vehicles to be certified and tested under SEA with parameter adjustment designs for which EPA has some reservations as to whether they will be adequately inaccessible. However, considering the tight leadtime remaining and the somewhat subjective nature of some of the evaluations which must be made, it is appropriate for EPA to assist the industry as much as possible with the establishment of adequately inaccessible parameters and allow a phase-in approach to achieving full compliance with the regulations.

III. Applicability

This A/C is only applicable for 1981 model year light-duty vehicles and trucks.

IV. Interim Criteria for Determinations of Inaccessibility of Parameter Adjustments

A. The format of this section is to state each of the relevant paragraphs of the regulations, one at a time, and then offer appropriate explanations and provide criteria which EPA will use to make decisions

regarding compliance with the regulations for the 1981 model year. The appropriateness of these criteria will be reevaluated for application in the 1982 model year based upon the experience gained with actual hardware evaluations for the 1981 model year and after holding a workshop with the regulated industry. These criteria are intended to give guidance as specific as possible for the 1981 model year as to what will be determined as adequately inaccessible. Further, it is possible that some novel designs that are not covered by this A/C may be determined to be adequately inaccessible as are other designs permitted under this A/C.

B. For 1981, EPA will not include electric drills or other power tools within its definition of simple tools. This policy will be re-evaluated for future years in light of the designs which are determined to be adequately inaccessible for the 1981 model year.

C. With regard to the idle mixture adjustment, 40 CFR 86.081-22(e) (2)(i)(A) provides:

The Administrator will determine a parameter to be adequately inaccessible or sealed if:

* * *

(A) In the case of an idle mixture screw, the screw is recessed within the carburetor casting and sealed with lead, thermosetting plastic, or an inverted elliptical spacer or sheared off after adjustment at the factory, and the inaccessibility is such that the screw cannot be accessed and/or adjusted with simple tools in one-half hour or for \$20 (1978 dollars) or less.

Guideline:

1. This regulation poses two simultaneous criteria. First, the idle mixture screw should be recessed within the casting and sealed or be sheared off at the factory. Secondly, the screw cannot be accessed and/or adjusted with simple tools in one-half hour or for \$20 (1978 dollars) or less. The requirement that the screw be recessed and sealed or sheared off does not need further explanation. The second criterion has caused the most significant concern and requires further explanation. EPA has determined that if the carburetor must be removed to gain access to the idle adjustment, and if such operation requires more than one-half hour to perform, then the screw is adequately inaccessible. EPA considers the following operations the minimum necessary steps to be considered in the estimation of the time required to remove a carburetor:

- a. Removal of the air cleaner
- b. Removal of the carburetor
- c. Performing the operation needed to unseal or gain access to the screw

- d. Reinstalling the carburetor
- e. Confirming that the engine can be started and operated.

2. EPA has made the determination, for 1981, that with state-of-the-art carburetors it would require a mechanic more than one-half hour on the average to perform the above operation sequence. Hence, for 1981, if it is necessary to remove the carburetor to be able to adjust the screw, whether it was sealed or not, EPA will determine such designs as adequately inaccessible.

3. For later model years, EPA may reevaluate this policy and reconsider the appropriateness of the generalized findings that the removal of any carburetor (i.e., starting with the removal of the air cleaner and including confirming that the engine can be started) will take more than one-half hour.

4. The question still remains as to what constitutes inaccessibility when the carburetor remains in place in the vehicle. For 1981, EPA will determine that idle mixture screws are adequately inaccessible if it is necessary to drill a hole in, to break, or to cut, the carburetor casting to unseal the screw as long as there are no guidemarks, stress reliefs, or scorings that can be used in conjunction with a maintenance instruction to explain how to break the casting. Given this general guideline, EPA will not determine as adequately inaccessible designs that only require that a small tab or ridge be broken off the casting to gain access to the adjustment screw.

5. Neither the above regulation nor this A/C precludes a determination of adequate inaccessibility for a design in which the idle mixture screw is not recessed. Without actually seeing the hardware first, it is not possible to present fully applicable criteria for these situations. However, for 1981, the above carburetor removal criteria would apply. That is, if it is necessary to remove the carburetor to gain access to the screw, it will be judged adequately inaccessible. An example of a design which would not be determined adequately inaccessible is one where the screw can be cut or broken off and still adjusted without removal of the carburetor.

6. If the screw is recessed and sealed with lead, thermosetting plastic, or an inverted elliptical spacer, it is not immune from a possible finding of accessibility. If the seal itself is the only impairment to accessibility, the ability to remove the seal must be subjected to the one-half-hour time limit or less than \$20 requirement.

7. The above general guidelines apply equally to air flow meters and fuel distributors for fuel injection systems. However, EPA has made no generalized finding that in order for fuel injection components to be judged adequately inaccessible it will require more than 30 minutes to remove and replace such devices. Some of these devices can be easily removed. On the other hand, for 1981 the guidelines regarding breaking, cutting, or drilling holes in carburetor castings will apply equally to fuel injection components.

D. With regard to the choke adjustment, 40 CFR 86.081-22(e)(2)(i)(B) and (C) provides:

The Administrator will determine a parameter to be adequately inaccessible or sealed if:

* * *

(B) In the case of a choke bimetal spring, the plate covering the bimetal spring is riveted or welded in place, or held in place with nonreversible screws.

(C) In the case of a parameter which may be adjusted by elongating or bending adjustable members (e.g., the choke vacuum break), any elongation of the adjustable member is limited by design or, in the case of a bendable member, the member is constructed of a material which when bent would return to its original shape after the force is removed (plastic or spring steel materials).

Guideline:

1. This portion of the regulation requires clarification of what is meant by the terms "plate" covering the bimetal spring and "nonreversible screws." Here, plate means any cover, whether it is a flat plate or a cap. EPA will determine any design to be adequately inaccessible if a rivet or nonreversible screw must be removed in order to remove the cover, bend it enough to gain access to the spring, or move the cover in a manner which causes the spring to move. A nonreversible screw is a screw which cannot be backed off, without breakage of the screw, using such simple tools as a screwdriver, pliers, Channellocks, or hammer and punch. If the cover is welded in place, the bimetal spring will be considered adequately inaccessible. For the 1981 model year, parameters which can only be accessed by breaking the cover will be considered inaccessible. EPA will not make a determination of adequate inaccessibility for designs which permit movement of the cover and, hence, movement of the spring by simply bending the restraining device or breaking a locking tab without a need to remove the fastening screws or rivets.

2. The same general guidance above (i.e., the removal of rivets and screws, etc.) applies to covers designed to prevent access to any other choke adjustment. Also, for 1981, EPA will make a determination of adequate inaccessibility for designs with covers which cannot be bent out of position, using the same tools addressed above, without permanently distorting linkages or impairing carburetor function.



E. With regard to time and 1978 dollars, 40 CFR 86.081-22(e)(2)(i)(D) provides:

The Administrator will determine a parameter to be adequately inaccessible or sealed if:

* * *

(D) In the case of any parameter, the manufacturer demonstrates that adjusting the parameter to settings other than the manufacturer's recommended setting takes more than one-half hour or costs more than \$20 (1978 dollars).

Guideline:

This paragraph applies to any parameter not specifically addressed above. The time and cost determinations will be based upon EPA's estimate of the average time or average flat rate time expected to be charged by the average service garage rather than the time required to perform the operation by a team of skilled engineers or technicians working under the motivation of trying to do the operation as fast as possible. For 1981, the \$20 in 1978 dollars is translated to \$24 in current (1980) dollars to account for inflation.